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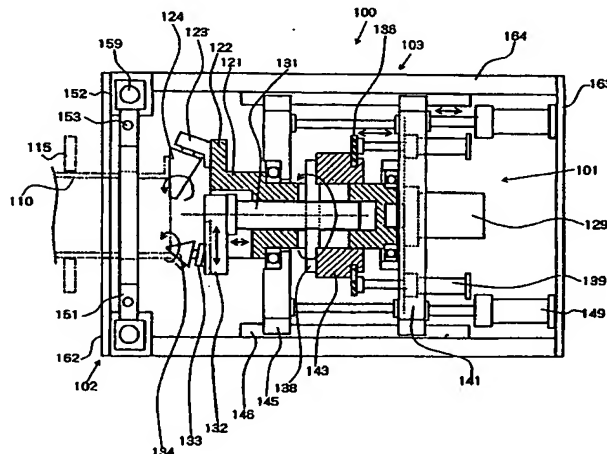
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- (51) 国際特許分類: B21D 51/16, 19/04, 41/02, B23P 23/02 (74) 代理人: 金田 暢之, 外(KANEDA, Nobuyuki et al.); 〒107-0052 東京都港区赤坂1丁目9番20号第16興和ビル8階 Tokyo (JP).
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- (71) 出願人 および  
(72) 発明者: 小川 清 (OGAWA, Kiyoshi) [JP/JP]; 〒963-8041 福島県郡山市富田町字向館95番地の2 Fukushima (JP). 2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(54) Title: COMPOSITE FABRICATION FACILITY OF STEEL TUBE AND FABRICATION METHOD OF STEEL TUBE

(54) 発明の名称: 鋼管複合加工設備と鋼管加工方法



(57) Abstract: A small and easy-to-move composite fabrication facility of steel tube and a fabrication method in which grinding of flared surface, beveling, and stripping of lining as well as flaring of a steel tube can be carried out. A spindle (121) is fixed rotatably to a slide frame (141) slidable with respect to a common frame (103), and a second machining head (124) is fixed to a flange part at the forward end of the spindle (121). A sub-shaft (131) is fixed in the spindle (121) slidably and rotatably together with the spindle and a first machining head (134) is fixed to a fixing base (132) at the forward end thereof. Through rotation and back/forth movement of the spindle (121) and back/forth movement of the sub-shaft (131) with respect to the spindle (121), the first machining head (134) flares the forward end part of a steel tube (110) held by a steel tube holder (102) up to a first position and then the second machining head (124) flares the forward end part of the steel tube up to a specified flanging position.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP02/10906

**A. CLASSIFICATION OF SUBJECT MATTER**Int.Cl<sup>7</sup> B21D51/16, 19/04, 41/02, B23P23/02

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> B21D51/16-51/18, 19/04, 39/08-39/20, 41/02, B23P23/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1926-1996	Jitsuyo Shinan Toroku Koho	1996-2003
Kokai Jitsuyo Shinan Koho	1971-2003	Toroku Jitsuyo Shinan Koho	1994-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2002-35849 A (Kiyoshi OGAWA), 05 February, 2002 (05.02.02), Full text (Family: none)	1-13
Y	JP 4-28422 A (Kaiyo Giken Kabushiki Kaisha), 31 January, 1992 (31.01.92), Full text (Family: none)	1-13
Y	JP 3-90220 A (Kabushiki Kaisha Arumasu), 16 April, 1991 (16.04.91), Full text (Family: none)	1-13

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:	"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
20 January, 2003 (20.01.03)Date of mailing of the international search report  
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## INTERNATIONAL SEARCH REPORT

International application No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 10-146623 A (CK Metals, Inc.), 02 June, 1998 (02.06.98), Full text (Family: none)	1-13
A	JP 58-77719 A (Benkan Plant Kabushiki Kaisha), 11 May, 1983 (11.05.83), Full text (Family: none)	1-13